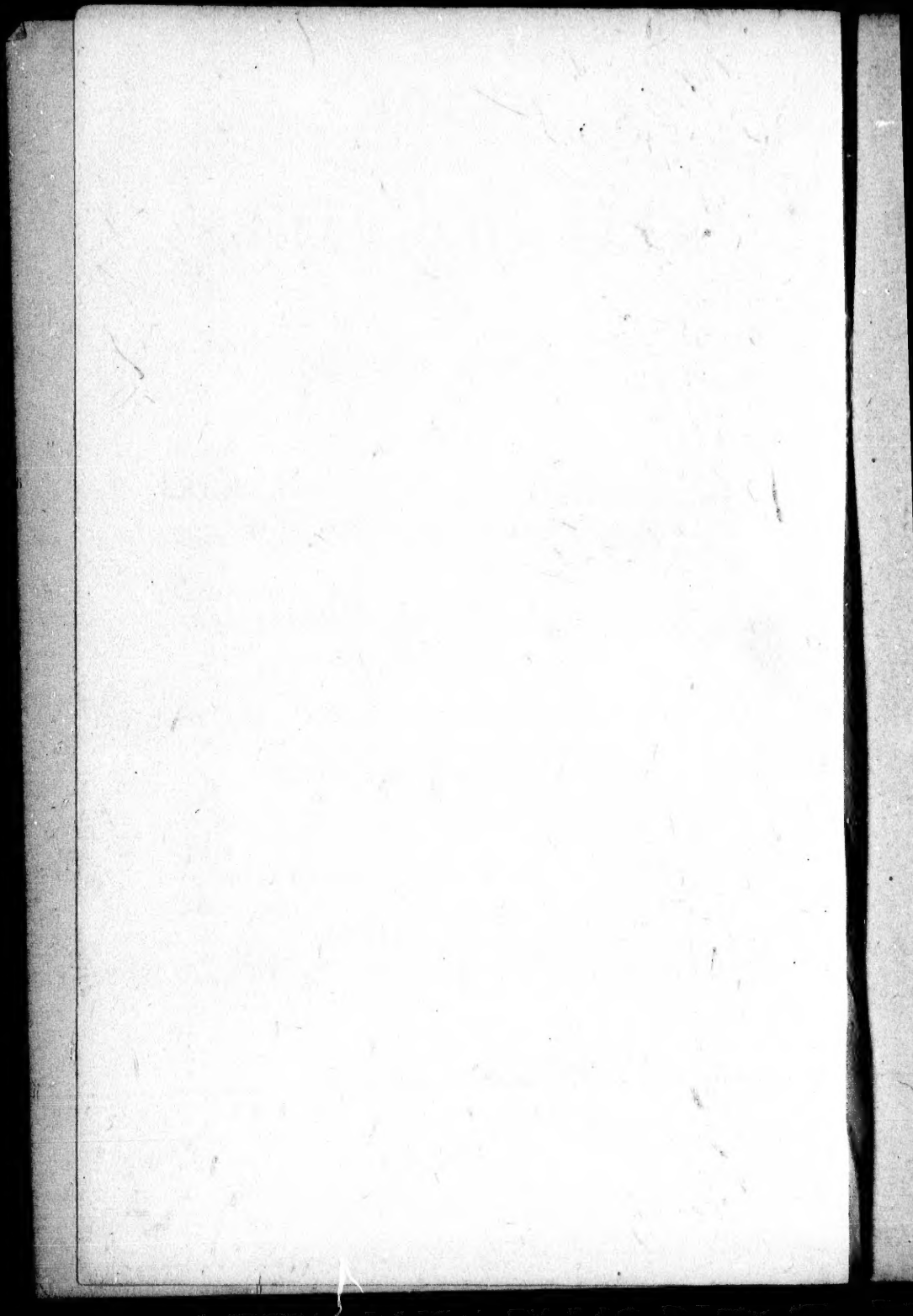




GUIDE
TO
NIAGARA FALLS
AND ITS
SCENERY,

INCLUDING

**ALL THE POINTS OF INTEREST, BOTH ON THE
AMERICAN AND CANADIAN SIDE.**

**GEOLOGY AND RECESSION OF THE FALLS,
BY SIR CHARLES LYELL.**

**EMBELLISHED WITH VIEWS OF THE FALLS AND SUSPENSION
BRIDGE, FROM STEREOSCOPIC VIEWS ESPECIALLY
FOR THIS WORK.**

By F. H. JOHNSON,

**CIVIL ENGINEER, A RESIDENT OF NIAGARA, AND AUTHOR OF MAPS,
STATISTICS, AND GUIDE-BOOKS OF THE FALLS.**

PHILADELPHIA:
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1864.

Entered, according to Act of Congress, in the year 1863, by

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TO THE VISITOR.

THIS is the only original, correct, and reliable work in market. The author for several years has been personally and familiarly acquainted with all the points of interest of this "world's wonder," and great pains have been taken to make this work in every respect correct, and worthy the attention of the tourist. The different routes and places are so arranged and minutely described that the stranger cannot be misled or hesitate. These pages are given to the public with the belief that something of the kind is needed, inasmuch as works written by casual observers are either unnecessarily prolix upon some points, or not sufficiently clear and explicit upon others to meet the wishes of the travelling public. This difficulty, it is believed, is entirely obviated in the following pages.

Follow the directions of this little work, and you can go to all the points of interest on both sides of the river.

THE AUTHOR.

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GUIDE TO NIAGARA FALLS.

Nearest Route to the Falls.

If the visitor stops at the *Cataract House*, or *International*, and wishes to take the nearest route to the Falls, pass down Falls Street* to the Ferry-House, go through the Ferry-House, and you will have a fine view of the American Fall. Height, 164 feet; width to Goat Island, opposite, 900 feet. The distance from your hotel to the Ferry-House is about a third of a mile, or say ten or twelve minutes' walk. The view from this point is grand and imposing. The American and Horse Shoe Falls, Goat Island with its stately oaks and dark waving forest, the opposite iron-bound shore, the river below, with the ferry-boats dancing like things of life upon the agitated waters,—all render it a place of much attractiveness.

If you wish to pass from this place to Goat Island, proceed up the bank a short distance till you come

* Falls Street runs east and west. The north side of the *International* is on this street. The railroad depot and American Hotel are on this street.

to the Iron Bridge leading over the Rapids; cross over the bridge, and keep to the right.

The Route to Goat Island.

From *Goat* or *Iris* Island are obtained the best and most striking views of the Falls. If you are at the *Cataract House*, or *International*, pass westwardly down Bridge Street,* and two or three minutes' walk will bring you to the

Iron Bridge,

leading to the toll-gate, on Bath Island. The bridge is about fifty rods above the Falls, and is an object of interest. The inquiry is not unfrequently made, How was it ever constructed over such a tremendous rapid? The first bridge was thrown across this angry stream in 1817, near the grist-mill, above the present bridge, with much hazard of life and great expense. It was carried away by the ice the ensuing spring. In 1818, another was constructed, where Bath Island Bridge now stands, by the Messrs. Porter brothers, the proprietors of the island.

A suitable pier was built at the water's edge; long timbers were projected over this abutment the distance they wished to sink the next pier, loaded on

* Bridge Street is the only street between the International and Cataract Hotels.

the end next to the shore with stone, to prevent moving; legs were framed through the ends of the projecting timbers, resting upon the rocky bottom, thus forming temporary piers until more substantial ones could be built.

Rapids.

The next thing that attracts the attention of the visitor, as he passes on his route to Goat Island, is the Rapids. These are grand and impressive; thousands, in the summer season, particularly when the sky is clear, stand upon this bridge, and gaze upon the angry flood as it rushes past them in all its wild and tumultuous fury, filling the mind with emotions of awe and indescribable grandeur. Let the visitor look up the Rapids as far as the eye can extend; the river appears very much like the ocean dashing upon the beach after a gale.

From the head of Goat Island to the grand cataract, a distance of three-quarters of a mile, the river falls fifty-one feet. It increases in velocity from seven to thirty miles per hour, before it makes the final plunge.

The Toll-Gate

stands on Bath Island. Here you pay twenty-five cents (carriages free), and if you register your name you will have the privilege of passing

and repassing any time during the current year. The small islands to the left, above the toll-gate, are called Ship and Brig Islands. Formerly a bridge extended to the larger one of these; and it was then called Lover's Retreat. The large building to the right is a paper-mill, in which is manufactured the paper of the New York Weekly and Tri-Weekly Tribune.

Chapin Island.

This island is to the right of and below the bridge, within a few rods of the American Fall. A man by the name of Chapin, while working on the bridge, was thrown into the stream, and carried by the current on to this island. Mr. Joel R. Robinson rescued him with a skiff. Hundreds of ladies and gentlemen witnessed this bold and daring adventure, which few, at so much hazard of life, would have had the nerve to attempt.

Goat Island.

The next point of interest, after passing a small bridge, is Iris or Goat Island. A good carriage-road leads around the island; distance, one mile and a quarter. Here are three ways: the left leads to the head of Goat Island, the middle one across the island to the Rapids, about sixty rods above the

Horse Shoe Fall. But most of the visitors do, and we will, if you please, take to the right, from the fact that we get the less impressive view of the Falls at first, and the more grand and imposing last, which, in the opinion of the author, gives the mind more time to appreciate the magnificent grandeur and awful sublimity of these mighty works. Eighty rods brings us to the foot or north side of the island.

The small sheet of water nearest you is

The Centre Fall.

which is between Goat and Luna Island,—a narrow and beautiful fall of water. A bridge passes over this to Luna Island. Underneath the centre fall is the Cave of the Winds.

Luna Island

is a favorite spot. It is a small island, containing about three-fourths of an acre, to the right and on the east side of Goat Island, reached by a foot-bridge. It is called Luna Island, not because it resembles the moon, but from the circumstance of a *lunar bow* being seen from this place more advantageously than from any other point. If the visitor's nerves are pretty steady, he can stand within one foot of the Falls, and see the angry stream dashing in all its fury upon the rocks below, impatient to try its power in making this fearful leap. The sheet of

water to the right is the American Fall; that to the left, the Centre Fall.

It has often been remarked by strangers that this island trembles,—which is undoubtedly true; but the impression is somewhat heightened by a nervous temperament.

It was at a point, after we pass the small foot-bridge, about twenty-five feet above the Falls, that young Miss Antoinette De Forest, of Buffalo, aged eight years, by some unaccountable casualty fell into the river, and Charles Addington, aged twenty-two, jumped in to save her, and they both went over the Falls together, June 21, 1849.

The body of the girl was found, much mutilated, the next day, and that of the young man floated four or five days afterward, when it was recovered. This was one of the most afflictive scenes that has occurred within our recollection.

Return by the same way to Goat Island. After resting a few moments, pass up the river to a sign on a tree,—“Biddle Stairs,” which lead to the

Cave of the Winds.

This cave is between Goat and Luna Island, under the Centre Fall, and is reached via the *Biddle Stairs*. It is seen to the best advantage from below. If the wind is blowing down the river, or from the American shore, you can stand with per-

fect safety upon a large, flat rock, within a few feet of the falling sheet, without inconvenience, or getting the least wet. In the afternoon, when the sun shines, there is always a splendid rainbow, between the sheet of water and the rock, within a few feet of you; and this is the only place on the globe, as far as the author can learn from history and from travelers, where a rainbow forming an entire circle can be seen. Two, and sometimes three, have been seen at once.

Width of the cave is one hundred feet; diameter, sixty; height, one hundred.

It is much visited both by ladies and gentlemen. The scenery is very fine.

The charge for going into the cave is one dollar; which includes the use of a suitable dress and the services of a reliable guide.

Sam Patch's Leap

is on the west side of Goat Island, near the Biddle Stairs. This celebrated person made two successful leaps in the year 1829, ninety-seven feet perpendicular, into the river below. Question by the visitor: How was this done? A ladder was raised, the bottom resting on the edge of the river, the top of the ladder inclining over the water, stayed by ropes to the trees on the bank, on the top of which was a small platform. He stood gazing upon the multitude

who had been attracted to the place by a man—as it was said—“going to jump over the Falls.” “One thing,” said he, “can be done as well as another,” bowed to the audience, stepped off the platform, and went down feet foremost. Q. How deep is the river where he went in? A. About fifty feet. Q. How deep did he go down? A. It is difficult to answer this question correctly:—probably not more than fifteen or twenty feet. Q. How long did he remain under water? A. Some said he was gone for good; others affirmed it was five minutes; but a gentleman holding his watch informed us it was just half a minute before he rose. Q. What became of the fool-hardy fellow? A. He made a jump at Rochester, Genesee Falls, the same year, which was his last. His body was never found.

Biddle Stairs

are on the northwest side of Goat Island: they were erected by Nicholas Biddle, President of the United States Bank. “Make us something,” said he to the workmen, “to descend and see what is below.” These stairs are spiral, firmly secured by heavy iron bolts fastened into the solid rock, and are, we believe, perfectly safe. Total number of steps, ninety.

At the foot are two paths leading in opposite directions: the one up the river leads toward the

Horse Shoe Fall, but the path is so much obstructed by rocks which have fallen, and the bank is so steep, that it is extremely difficult to get within thirty rods of the Horse Shoe Fall. But by passing down the river a short distance the Centre Fall, or Cave of the Winds, bursts upon the astonished sight in all its terrific grandeur. The impending rocks sometimes fill the visitor with alarm lest they might fall; but they seldom fall in the summer season, and no accident has occurred since the year 1829.

On returning, proceed up the river about sixty rods to a small house built by the proprietor of the island, for the purpose of rest. Descend the bank, and cross a small bridge to the tower. This is called

Horse Shoe Tower.

This tower is on the west side of Goat Island, within three rods of the Falls,—forty-five feet high, and two hundred feet above the river below, surrounded near the top by a portico and an iron railing. This tower has been called by some Prospect Tower, and by others Terrapin Tower, but is generally and best known as Horse Shoe Tower. Visitors of a nervous temperament, and especially old people, when stepping out upon this piazza, not unfrequently feel a kind of giddiness or tremor; but on looking up or around upon the green foliage, the

nerves generally become tranquil. We are then better prepared to appreciate the overwhelming grandeur of this magnificent scene. The view from this tower, in the opinion of the author, of the width of the river, the Rapids, the Horse Shoe Fall, and the angry, boiling deep below, is not surpassed by any other.

The river below, in its wild, tumultuous fury, produces a perfect foam.

The Horse Shoe Fall.

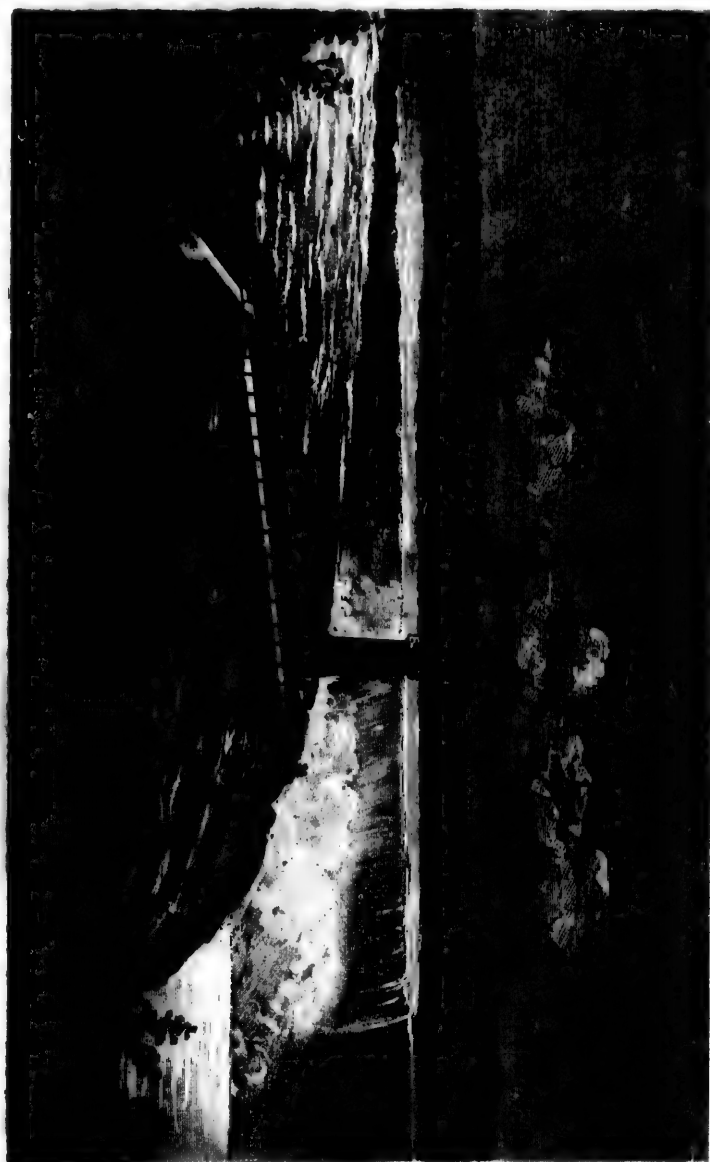
This is the entire circle from Goat Island to the Canadian side of the river. Its width, by calculation, is 144 rods; perpendicular height, 158 feet. It derived its name from its shape; but it must have altered much since it was first named, as large masses of rocks in the neighborhood of the Horse Shoe fall every year.

This is sometimes called the Canada Fall,—which is a mistake: the Americans own one-half of it. The line between the two Governments runs in the centre of the river, through the point of the Horse Shoe, where it looks so green, following the deepest channel, and through the centre of the lakes.

Quantity of Water.

Professor Lyell says, fifteen hundred millions of cubic feet pass over the Falls every minute. Dr. Dwight, former President of Yale College, says, one

Goat Island



THE HORSE SHOE FALL
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hundred millions two hundred thousand tons pass over the Falls every hour. Judge De Veaux, in his *Traveler's Own Book*, says, five thousand eighty-four millions eighty-nine thousand eight hundred fifty-three barrels descend in twenty-four hours; two hundred eleven millions eight hundred thirty-six thousand eight hundred fifty-three every hour; three millions five hundred thirty thousand six hundred fourteen every minute; fifty-eight thousand three hundred forty-three every second. "I should think," says one, "that the river would exhaust itself." True, when the upper lakes, with their vast tributaries, run dry, Niagara will be no more.

Other estimates, by scientific gentlemen, have been made, arriving at nearly the same results.

Depth of Water on the top of Horse Shoe Fall.

It is estimated, by Sir Charles Lyell and others, to be twenty feet in the centre, or where the water looks so green. There is, however, a better datum whence to ascertain this fact than all the calculations, however learned. The ship *Detroit*, being condemned on the lake, was bought by a company, loaded with a live buffalo, bear, deer, fox, and other animals, and sent over the Falls in the year 1829. She was knocked to pieces in the Rapids, except about half of her hull, which was filled with water. It drew eighteen feet, and passed over the point of the

Horse Shoe, without touching. Hundreds saw her make this fearful plunge, and I have no doubt that the estimates are correct. This, then, gives a solid column of water on the top of the rock of at least twenty feet.

The visitor, after spending what time he wishes on Horse Shoe Tower, will return to the bank. If he wishes to reach his hotel by the nearest route, without going round by the head of the island, he will take a small path directly back of the building fronting Horse Shoe Tower. This is a pleasant walk leading to the bridge, and shortens the distance more than one-half. But we will suppose he wishes to continue his rambles around Goat Island.

The best point from which to get a correct view of the shape of the Horse Shoe Fall is about forty rods up the river, from the point where he ascends the bank from the tower, near a small stone monument, directly in his path, marked with a cross on the top, set by the surveyors to ascertain if the Falls recede. Let him step to the bank, and he will get one of the best views of the shape of the Horse Shoe there is, on either side of the river.

Three Sisters.

These islands are on the southwest side, and near the head of Goat Island. In the year 1841 a man by the name of A. P. Allen, in attempting to

cross the river in a skiff, from Chippewa, unfortunately broke one of his cars; but, with a skill and coolness never surpassed, he managed to reach the outer island, and jumped ashore, while his skiff darted on like an arrow over the Falls. Though saved from immediate death, yet his situation was perilous in the extreme: the hope of rescue was extremely doubtful, and starvation was staring him in the face. Two nights and one day he remained upon this lonely spot. He struck a fire: the smoke wreathed in columns above the tree-tops. Great numbers of our citizens assembled, and heard his cries for help. At length a rope was thrown across from one island to the other, and by means of a skiff the same intrepid Robinson who had rescued Chapin succeeded in bringing him safe to shore.

Bathing-Place of Francis Abbot, the Hermit.

The bathing-place of Francis Abbot is on the west side of Goat Island, the first perpendicular cascade after leaving Horse Shoe Tower, near the three islands called the Three Sisters. He was learned, gentlemanly, and accomplished, pleasing in address, but could not be approached by a stranger. He lived nearly twenty months entirely alone. He was drowned below the ferry, in the year 1831. His body was found at Fort Niagara, fourteen miles below, recognized, brought back, and sleeps in our

burying-ground. This lonely spot was resorted to by this singular individual generally at night. The thunder's terrific sound, the lightning's blaze, mingled with the roar of the cataract, was the element in which he delighted to breathe. Very little is known of his history.

Head of Goat Island.

At this point, Navy Island, near the Canada shore, to the right, containing three hundred and forty acres, the scene of the McKenzie War in 1837-38, is in plain sight. It was occupied by three or four hundred Americans,—a heterogeneous mass of all classes, without discipline, or any efficient means to carry on war. Chippewa, on the Canada shore but a short distance below, contained at the time four or five thousand British soldiers. The two Governments took no active part in this hot-headed enterprise, and it fell by its own weight. Grand Island is to the left, on the American side, resembling the main shore, containing seventeen thousand two hundred and forty acres, purchased by M. M. Noah, and, according to his fanciful visions, it was to be the future home of all the Jews on the globe. The visitor, in turning his eye to the right and left, will readily perceive how this island divides the river, the greater portion rolling to the Canada shore.

It would, while passing the bridge, be thought in

credible that any person could have reached the island before a bridge was built. Yet such is the fact. As early as 1765, several French officers were conveyed to it by Indians in canoes, carefully dropping down the river between the dividing waters where the river for some little distance is calm; and Peter B. Porter, of Black Rock, with some other gentlemen, also made a trip to the island in a boat. They found but little trouble in descending, but their return was difficult and hazardous.*

It was effected by shoving the boat with setting-poles up the most shallow part of the current for half a mile, before making for the shore. Falling into the current within a mile of the Falls must be fatal. Several accidents of this kind have happened, and the unfortunate persons, as far as the author can recollect, were hurried on to destruction.

It is but a few years since an Indian, partially intoxicated, on attempting to cross the river in a canoe, was drawn into the Rapids. Finding all efforts to reach the shore unavailing, he took a good horn of whiskey, lay down in his canoe, passed rapidly over the Falls, plunged into the yawning vortex below, and disappeared forever. At this point, the head of Goat Island, where we are now

* Trees marked 1765 and 1769 were, until within a few years past, clearly to be seen.

standing, it can be more satisfactorily explained why it was called Goat Island. A man by the name of Stedman, about seventy years since, put some goats upon the island, which remained there nearly two years. He reached the island and returned the same way as the Indians and others had done.

The old clearing you notice at the left is part of an Indian burying-ground, but of the tribe to whom it belonged nothing definite is known. It is supposed by some they were the Iroquois.

Iris or Goat Island.

Iris or Goat Island contains sixty-nine and a half acres, is a fraction over a mile in circumference, and heavily timbered. Most of the smooth-bark trees are marked with initials bearing different dates. "In 1805," says Judge Porter, "there was a beech-tree on the bank near the Horse Shoe Fall, marked 1770, 1771, and 1772." The names of these early travelers are not recollected.

No sportsman is allowed to carry a gun on this island, as it would endanger the lives of those who are promenading through it. The cottage near the bridge is the only dwelling on the island. The island affords a wild and delightful retreat: in the hottest days there is always a refreshing and invigorating breeze from the river. There are three bridges connected with this island, and one tower.

The visitor will perceive that there is an excellent carriage-road entirely round the island, and, if he chooses, he can get a good carriage to carry a party of six or eight, at an expense of one dollar and a half per hour.

Local Distances.

Local distances connected with Goat Island are as follow :—

From the Cataract House to Goat Island	75 rods.
From the International to Goat Island	70 "
From Goat Island, where the road ascends the bank, to the foot	80 "
From foot of the island and up the river to Biddle Stairs	15 "
From Biddle Stairs to Horse Shoe Tower	65 "
From Horse Shoe Tower to the Three Sisters	150 "
Head of Goat Island	65 "
To the Bridge	85 "
Circumference of Goat Island	376 "

The whole distance from the Cataract House, or International, around the island, is one and a half miles and a fraction over.

Spray.

Spray, like the smoke of a burning mountain, sometimes rises, forming dark, heavy clouds, tinged with the refulgent rays of the rising and setting sun, which have been seen, says Judge Porter, more than one hundred miles.

Rainbows.

There are two. One is always seen in the day-time, when the sun shines; the other at night,—called the Lunar Bow. The latter is only beheld once a month, when the moon is at the full and sufficiently high in the heavens, and the sky clear. And Niagara, as far as the author can learn from travelers and from history, is the only place on the globe where a rainbow at night can be seen with distinctness. At all events, the lunar bow is peculiar to this place.

View of the Falls at Night.

An evening view has a very different effect upon the mind of the beholder, from that of the view in the daytime. The moonbeams playing upon the agitated waters; the spray, like the smoke of a volcano, rising into the sky; the endless roar of the cataract, mingled with the heart's deepest impressions, give such an indescribable sublimity and grandeur, that language is but a poor vehicle to convey the impressions we feel.

View of the Falls at Sunrise.

This view is thought, by thousands, to have no rival in grandeur, sublimity, and interest. Every point of time, however, in getting a view is dif-

ferent, and has its different effect upon the beholder.

View of the Falls at Sunset.

When the sun has rolled onward in his chariot of fire, and thrown his last rays upon Niagara, bidding adieu for the night to the grandeur of the scene that so much in power resembles himself, the view is perfectly indescribable.

Roar of the Falls.

This depends much upon the wind, and the state of the atmosphere. Sometimes every door and window, the least ajar, for a mile around, will tremble, and the roar may be heard from fifteen to twenty-five miles. At other times our citizens would scarcely know that there were Falls in the neighborhood. In a few instances the roar has been heard at Toronto, a distance of forty-four miles.

First Impression of Strangers.

At first sight, strangers are sometimes disappointed: either their expectations have been raised too high, or the sublimity, grandeur, and magnificence of the scene far surpass every thing they could possibly have anticipated.

The second view is frequently more impressive than the first. The longer the visitor tarries, the more he enjoys and appreciates; the impression is

indelibly entamped upon his memory, and for years infixed there, as with the imprint of a sunbeam.

The Falls, it is true, when seen from above, do not appear more than fifty or sixty feet high; but let the visitor go below, if he would get a correct impression of the stupendous work.

Rise of the River.

Those causes which swell other rivers have no effect upon this. It never rises unless the wind has been blowing down Lake Erie from a westerly direction. S. Ware, Esq., who kept the ferry for seventeen years, says, "One foot on the top of the Falls will, by actual measurement, raise it seventeen and a half feet below." This is attributable to the river being pent up in a very narrow pass at the Suspension Bridge, and not being able to find its way out as fast as it accumulates above.

Fall of the River.

From Lake Erie to Lake Ontario (36 miles), 389 feet; from Lake Erie to the head of Goat Island (22 miles), 25 feet; from the head of Goat Island to the Main Fall (half a mile), 50 feet; perpendicular height of the American Fall, 164 feet; on the Canada side, 158 feet; from the Falls to the Whirlpool (2½ miles), 64 feet; from the Whirlpool to Lake Ontario (11 miles), 25 feet. Total in 36 miles, between the two lakes, 389 feet.

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Depth of the River below the Falls.

This has never been ascertained. Engineers and others have at different times attempted to sound it, but, owing to the strong and irregular undercurrents, no definite report could be made. It is thought to be from 150 to 250 feet deep.

The Falls Cannot be Described.

There is too much sublimity, majesty, and overwhelming grandeur for finite minds to comprehend or explain. No language is adequate to give to the stranger a correct idea of these stupendous works of the Almighty. And they have always appeared to the author like the hand of the Deity stretched out for his creatures to look at. "Lo, these are parts of his ways;" "But the thunder of his power who can understand?"

Winter Scene.

It is thought by many, who have visited the Falls at this season, that it far surpasses that of summer. The icicles, in the shape of inverted cones, hanging from the high banks, the dazzling splendor of an effulgent sun darting his fiery beams upon them; the frozen spray, clothing the trees in its silvery robe; the roar of the ice, as it rushes onward to try the fearful leap; the ceaseless thunder of the cataract; the bow of promise smiling serenely upon

the angry flood ; the enchained river within its icy embrace, struggling like some monster of the deep to be free,—all combine to render the scene awfully grand and terrific. No language is adequate to give a correct impression ; it must be seen before it can be appreciated.

The First Man who saw the Falls.

The first white man who saw the Falls, as far as we have any authentic record, was Father Hennepin, Jesuit missionary, sent out from the French among the Indians, as early as the year 1678, 185 years since. His descriptions were visionary and exceedingly exaggerated. He thought the Falls six or seven hundred feet high, and that four persons could walk abreast under the sheet of water, without any other inconvenience than a slight sprinkling from the spray. But we would not attribute this wild and fanciful description to a want of candor, or an intention to deceive. The fact probably was, he had no means of measuring its height, and undoubtedly got his account from the Indians, which very likely would be incorrect.

Indian Tradition.

The Indians, it is said in Judge De Veaux's works, have a tradition that two human beings, yearly, will be sacrificed to the Great Spirit of these Waters.

Whether any reliance can be placed upon the tradition of the Indians or not, it is nevertheless true, that almost every year has proved fatal to some one. The following instances can be mentioned.

Casualties.

Dr. Hungerford, of West Troy, was killed by a rock falling upon him, between Biddle Stairs and the Cave of the Winds. May 27, 1839.

John York is supposed to have gone over the Falls, as pieces of his boat and part of the loading were picked up below, 28th Nov. 1841. William Kennedy was in the boat with him, and found dead on Grass Island, just above the Rapids.

J. H. Thompson, of Philadelphia, was washed off of a rock below the Falls, under the great sheet of water, by leaving the guide and venturing too far upon places of danger. August 16, 1844.

Miss Martha K. Rugg, from Lancaster, near Boston, Mass., while picking a flower, fell over the bank, just below Barnett's Museum (Canada side), one hundred and fifteen feet. August 23, 1844. She lived about three hours.

Charles Smart, from Philadelphia, fell about forty feet from a rock in the Cave of the Winds. Aug. 31, 1846. Killed instantly.

John Murphy, aged fourteen years, son of a widow lady of our village, attempting to cross the

river in a canoe, about a mile above the Falls, was drawn into the current and went over. His body was never found. June 18, 1847.

A son of Mr. White, aged five years, and his sister, about one year and a half older, were playing in a canoe; it floated out into the stream. The agonized mother beheld this heart-rending scene; she rushed into the river nearly up to her neck,—rescued the girl; the boy went over. He was last seen sitting in the bottom of the canoe, holding on to each side with his hands. July 9, 1848. His body was never found.

A gentleman from Buffalo, supposed to be on an excursion shooting ducks; his boat was drawn into the Rapids above the grist-mill—seen by several of our citizens to pass under the bridge—heard to exclaim, “Can I be saved?” His boat, with the velocity of lightning, passed on, dashed against a rock nearly opposite the chair factory; he was thrown out; went over feet foremost, near the American shore. August 25, 1848. His body has never been found.

A Mrs. Miller cut her shawl in pieces, tied them together, and hung them over the bridge leading to Goat Island, intending, doubtless, to induce the belief that she had let herself down into the angry flood and had gone over the Falls. Very few of our citizens believed it, as there was too much pains

taken, for the purpose of committing suicide. It was all a farce, as she was heard from at Syracuse and other places, a few days after. Some love-affair occasioned this wild freak. Her father, a very respectable lawyer, died soon afterwards, it was thought of a broken heart.

A gentleman from Troy, N. Y., in the winter of 1852, while passing over the bridge to the Tower, fell into the river, was instantly carried to the verge of the precipice, and lodged between two rocks. Mr. Isaac Davy rescued him, by throwing some lines in the direction; he had just sufficient strength left to tie them around his body, and he drew him to the bridge, whence he was taken to the Falls Hotel. He remained speechless for several hours, but finally recovered.

Avery on the Log.

On the morning of July 19, 1853, a great excitement was created by the discovery of a man on a log in the Rapids, midway between the main shore and Bath Island, and about thirty rods below the bridge which leads to the toll-gate on the island. The rock against which the log had lodged can be seen from the bridge, or from the bank. The circumstances, as near as are known, of the way he got there, are these. This man, Avery, and another man, being in the employ of Mr. Brown, boating

sand above the Falls about two miles, got into a boat at ten o'clock at night to take a pleasure-sail. The next morning Mr. Avery was discovered on the log above mentioned, which being reported called thousands of people to the spot to see the unfortunate man and to do what they could to rescue him. In the first place a small boat was let down; but it filled with water, and sunk before it reached him. By this time a life-boat from Buffalo had reached the spot, and was lowered into the stream, which reached the log he was on, passed by above it, capsized, and sunk, which was the last of that. Next, a small boat was let down, which reached the spot all right, but the rope got entangled under the log, and could not be got loose; so that boat was useless. Another plan was tried: a raft was let down to him all right, and he got on it, and the raft was moved toward Bath Island as far as it could be, but the ropes soon got entangled in the rocks, and the raft stuck fast. Then another boat was let down to him, to take him from the raft; but as the boat reached the raft, the water dashed the boat against the bow of the raft, which gave it a sudden jog, and Avery, not using the means that were prepared for his safety, viz., ropes for him to hold on to, or tie himself with, stood erect on the stern of the raft; and as the boat struck, he fell off backward, and the rapid water carried him over the

Falls, at about six o'clock P. M., at which time the crowd (being about three thousand in number) left the spot with slow and solemn steps for their homes. It was an awful scene.

A Visit to Goat Island by Moonlight.

Thousands, in the summer season, when the weather is fair, promenade through the island at night:—it is a delightful treat. The carriage-road is fine; the dark forest, in all its native grandeur, is around them; not a breath moves the surrounding foliage; the moon, pouring a flood of mellow light through the openings of the trees, the silence of death is only interrupted by Niagara's ceaseless roar, filling the mind with emotions of awe, grandeur, and sublimity which it is impossible to describe. It must be witnessed before it can be appreciated.

The Lunar Bow

can only be seen about once a month, or when the moon is within two or three days previous or after its full. The reason is, there is not light enough to form the bow. The best points from which to view this grand spectacle are at the foot of Goat Island, on Luna Island, and Horse Shoe Tower. If the sky is clear, the wind right, and the atmosphere favorable, an entire arch can be seen. The author has frequently seen a whole arch, with three colors very

distinct; and we are inclined to believe, as far as we can learn from travellers, that this is the only place on the globe where a rainbow at night, in the form of an arch, can be seen at all. It is indescribably grand, worthy the attention of the tourist, and will amply repay him for a trip to the island to behold. "Thou hast told us right," said a party of Friends, from Philadelphia, to the author: "this sight alone is sufficient to pay us for a journey to the Falls." The mind takes a wild and sublime range, but its emotions cannot be expressed.

Local Distances about the Falls—American Side.

From Cataract House to Ferry.....	90 rods
“ the International to Ferry.....	80 “
“ “ American to Ferry.....	150 “
From the hotels to the	
Suspension Bridge.....	2 miles
Whirlpool	2½ “
Devil's Hole, or Bloody Run.....	3½ “
Indian Village.....	9 “
Lewiston.....	7 “
Fort Niagara.....	14 “
Number of steps at the Ferry.....	290

Indian Village

is nine miles from the Falls, on the American side. There is nothing here that has the shape of a village. A few scattering huts, most of them log houses, are all that is to be seen. A ride to the meeting-house

on the Sabbath is frequently made; there is preaching in English by a missionary, which is interpreted into the Indian language by the chief, or one of the tribe. They are the Tuscaroras, formerly from North Carolina, once a powerful, warlike tribe, but now diminished to a mere handful. Their women are at the Falls nearly every day during the visiting season, and are very ingenious in making bead-work, which they offer for sale. As to charge for a carriage to the village, there is no definite price; it is generally from three to six dollars.

Niagara

is a corruption of the Indian word Onyakarra, supposed to be in the Iroquois language, as the Iroquois were the first who dwelt here, as far as we know. The meaning of the term is "mighty, wonderful, thundering" water. It lies in latitude 43 degrees 6 minutes north, and longitude 2 degrees 5 minutes west from London.

Health of the Vicinity of the Falls.

No place in the United States can boast of a greater degree of uninterrupted health than the Falls. The town contains about three thousand inhabitants. Not an epidemic, not a case of cholera, has ever originated here. This is attributable, doubtless, in some degree, to the rapid current of the river and the pure and exhilarating state of the

atmosphere. Whatever may be the cause, such is the fact; and it is acknowledged by every one.

Hotels.

The Cataract House and International are considered among the best first-class houses in the United States. The American and Niagara are also good second-class hotels.

The Nearest Route to Canada (Table Rock, Burning Spring, and Lundy's Lane Battle-Ground)

is by the Ferry. The view of the Falls and river from the ferry-boat is one of the very best; and the visitor should not fail to witness it. The ferry-boats are new, commodious, and perfectly safe. Not an accident has occurred at the Ferry for forty-five years. As you land on the Canada side you can procure a hack to take you to Table Rock, &c.

The expenses by this route will be as follows:—

Ferriage, including cars down the bank.....	20 cts.
Hack to Table Rock, from 12½ to 50 cts,—say.....	25
Or hack to Table Rock, Burning Spring, and Battle-Ground,—say	\$2 00
If you go under the sheet of water, 50 cts. to \$1 00,—say.....	\$1 00
Charge at Burning Spring.....	25
Charge at Battle-Ground for going up on the Pagoda.....	25
Ferriage returning.....	20
Cars up the bank	5

For table of distances, see page 42.

Landing on the Canada Side.

There is a good carriage-road up the bank, and, if the visitor feels disposed, he can walk at his leisure, and thus have more time to contemplate and appreciate this wonderful scene. If he prefers riding, he can get a good carriage, with careful drivers, to take him to Table Rock, generally for twelve and a half or twenty-five cents. It would be advisable to make a bargain before you start, as the drivers will sometimes tell you they will carry you for a shilling, —meaning Canada currency. One shilling of that money is twenty-two cents on this side. Price of carriages by the hour, for the party, on that side, is usually one dollar.

Clifton House.

This is a large, first-class hotel on the Canada side, at the top of the hill as you ascend the bank from the Ferry. Eighty rods below, on the edge of the bank, is Victoria Point.

The Museum

is near Table Rock. Charge for admittance is twenty-five cents. About twenty rods below the Museum is the point where Miss Martha K. Rugg fell over the bank, one hundred and fifty feet perpendicular. (See Casualties.) The next grand and all-absorbing point of interest is Table Rock.

The route to Canada (Table Rock, Burning Spring, and Lundy's Lane Battle-Ground), by the Suspension Bridge.

Many prefer to engage a carriage on this side and go to Canada via Suspension Bridge. The time required for this trip is usually half a day, or from three to five hours.

The charges may be put down as follow:—

Carriage-hire, \$1 50 per hour, or, if by the job, from 3 to \$4 00,—say.....	\$3 50
Toll at bridge for carriage going and returning....	50
Toll at bridge for each person (driver free)	25
Charges at Table Rock, nothing,—unless you go under the sheet of water, which will cost.....	1 00
Charges at Burning Spring.....	25
Charges at Lundy's Lane Battle-Ground.....	25

* If you purchase any goods, it will be well to remember that you have to pay a duty of thirty-three per cent., unless the Custom-House officer neglects his duty.

Suspension Bridge

is two miles below the Falls, is eight hundred feet long, and extends two hundred and thirty feet above one of the maddest streams on the globe. It is owned by a stock-company, and cost about five hundred thousand dollars. It was built under the superintendence of J. A. Roebling. The cars of the Great Western Railroad pass over the bridge to connect with the New York Central.



THE GREAT INTERNATIONAL RAILWAY SUSPENSION BRIDGES

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The following are the dimensions:—

Length of span from centre to centre of towers	822 ft.
Height of tower above rock on the Amer. side...	88 "
" " " " " " Canada side.	78 "
" " " " floor of railway	60 "
" " track " water	258 "
Number of wire cables	4
Diameter of each cable	10½ in.
Number of No. 9 wires in each cable	3659
Ultimate aggregate strength of cables	12,400 tons.
Weight of superstructure	800 "
" " " " and maximum loads...	1250 "
Maximum weight the cable and stays will support	7300 "

NOTE.—The wires were first got across by means of a kite.

Table Rock

is on the Canada side, near the great Horse Shoe Fall, and the terminus of the carriage-road in this direction. It was formerly about fifteen rods long, and three wide, and projected over the precipice from fifty to sixty feet. Thousands of the most timid have stood upon this giddy eminence with perfect safety, and gazed upon the resplendent grandeur of this enchanting, bewildering scene. While contemplating it, the mind is lost, and sinks back upon itself amid the immensity of God's works. Two large portions of Table Rock have fallen within a few years, but have detracted but little from this grand view.

The charge for going under the sheet of water is one dollar: when opposition is strong between the two places, the charge is often less.

Fall of Table Rock.

On the 26th of June, 1850, our citizens were startled with the report that Table Rock had fallen. Many of us instantly repaired to the place, to witness for ourselves an event we had long expected. What a chasm! What a tremendous crash! The rocks heaved, the earth trembled. A mass of rock, nearly two hundred feet long, sixty wide, and one hundred thick, fell into the river, and almost every particle disappeared from sight. The noise produced by this falling rock was something like the rumbling of an earthquake. It was heard four or five miles on each side of the river. Fortunately, no lives were lost, though some forty or fifty persons were standing upon the rock but a few moments before. In 1818, a portion of Table Rock fell. In 1828, a large mass fell from the centre of the Horse Shoe Falls. Another mass fell, connected with Table Rock, and extending under the sheet of water toward the point of the Horse Shoe, about one hundred and fifty feet long, fifty wide, and one hundred deep, carrying with it a canal-boat that had lain on the verge of the Horse Shoe for months.

Manitou Rock.

The large rock at the edge of the water below Table Rock is called Manitou Rock, and is the one on which the Indians used to sacrifice a dog to the Great Spirit.

Burning Spring.

This spring is situated two miles above the Falls, on the Canada side, near the water's edge. It is the carbonated sulphuretted hydrogen gas that burns. Touched with a match it gives out a brilliant flame, rising two or three feet high. Many are very much interested, and to those who have never seen any thing of the kind it is an object of a good deal of interest. Charges, twenty-five cents. cents.

Chippewa.

The village of Chippewa is on the British side, three miles above the Falls.

Lundy's Lane Battle-Field.

Lundy's Lane is a mile and a half west of the Falls, on the Canada side. The battle, in its hottest fury, was fought principally in the night, with the bayonet; Gen. Peter B. Porter commanding the volunteers,—Generals Brown and Scott wounded, Riall and Drummond (British generals) wounded and taken prisoners. This, it is said, was the severest battle ever fought on this continent. The British

had in killed and wounded eight hundred and seventy-seven, the Americans eight hundred and sixty. It was a drawn game,—both parties claiming the victory. July 25, 1814.

The above is taken from General Brown's official report to the Secretary of War. This is sometimes blended with the Chippewa battle, but it is a mistake: Chippewa battle was fought near the Burning Spring, July 5, 1814. The charge for ascending the Pagoda at the Battle-Ground is twenty-five cents.

Local Distances—Canada Side.

From the water's edge to the Clifton House.....	106 rods
From the Clifton House to Table Rock.....	220 "
From Suspension Bridge to Table Rock.....	2 miles
From Table Rock to Lundy's Lane Battle-Ground,	1½ "
To the Burning Spring.....	2½ "
To Chippewa.....	3 "
To the Whirlpool.....	4½ "
To Brock's Monument.....	7½ "

Burning of the Steamer "Caroline."

If the appearance of a ship on fire at sea, at night, in a thunder-storm, is grand and terrific, no less so was that of the steamboat Caroline in flames, as she was loosed from her moorings at the old landing near Fort Schlosser, and towed out into the middle of the river, by the command of Colonel McNab, a British officer. Here she was abandoned

and left to her fate. The night was intensely dark. She moved steadily on; a broad sheet of lurid flame shot high into the heavens, illuminating the western clouds with its red glare; rockets were ascending from the Canada shore, expressive of the success of the expedition. A universal shout rings out upon the night air from the party who have just left the doomed boat. She enters the Rapids at the head of Goat Island, nearest the Canada shore, careens over, rights, and passes on, like a flaming meteor, to her final doom. Striking upon Gull Island, she swings around, awfully shattered by the conflict, the flames rolling up for a moment, as if not alarmed by Niagara's roar, but determined not to be encircled within its cold embrace or to be beaten by its mighty and terrific power. The war of the elements continues for an instant; the Caroline has disappeared, leaving "not a wrack behind;" and Niagara is victor, proclaiming to the world that its power is not lessened by the strife of men, or any casual floating substance upon its bosom. Very few, however, beheld this grand spectacle, as it was during the night, and most of the inhabitants had retired from the frontiers. It is not our purpose, at this time, to enter into the minutiae of this affair: suffice it to say, the boat was charged by the British with aiding the refugees by carrying provisions and arms to Navy

Island, which doubtless was true. This specification was brought before the court by the British consul at the trial of McLeod for the murder of a gentleman from Buffalo who was shot on board the *Caroline*. It will be recollected McLeod was acquitted.

The fragments of the boat that lodged on Gull Island remained there until the next spring. What was left of her after passing the Rapids went over the point of the Horse Shoe Fall. No person, we believe, was on board. December 29, 1839.

The Line between the two Governments, as agreed upon by the commissioners (General P. B. Porter was one, on behalf of the United States Government), is in the centre of the river, or deepest channel, passing through the point of the Horse Shoe, through the centre of Lake Erie, Lake Superior, and so on to the northern boundaries of the United States.

Fort Schlosser

is two and a half miles above the Falls, on the American side. It is memorable for its antiquity, and its associations of the British and French, each holding alternately the possession up to the year 1775.

Scarcely a vestige of the ruins marks the place where it once stood. It is not visited by travelers.

Indian Offering to the Falls.

In the month of August, 1851, the writer accompanied a party of Indians from the northwest wilds of Minnesota (on their way to Washington) to the foot of the American Falls. The wind was favorable, and we approached within a few feet of the falling sheet. They gazed in rapt wonder on the mighty flood, as it rolled its angry waters and fell upon the resounding rocks below. For a long time, every muscle of their countenances indicated a religious awe, and their thoughts appeared to be communing with some superior power. At a signal from the chief, they drew a small red pipe from their girdle, and, with a great deal of solemn gesturing, each threw his pipe under the Falls. This, I was told by the interpreter, was a religious offering to the Great Spirit, that he would be propitious to them on their journey and return them in safety to their homes. We then conducted them to the Tower, on the west side of Goat Island. They were induced, by some ladies and gentlemen present, to give their views of what they saw. They did so, in the following words, as far as their language could be interpreted.

"Brothers," said the chief, "we live in the woods, far towards the setting sun. Our fathers once owned these lands and this river; they have told us of these Falls, but now we see them. Brothers,

you are great, but you cannot stop this water; you cannot put your hand on its mouth and make it still. Yonder," pointing to the clouds, "is the Great Spirit; he made these, and this is his work; and yonder," pointing to the rainbow (which at the time shone most brilliantly), "we see his face,—we see him smile. We shall tell our children what we have seen. Brothers, our hearts are glad that we turned aside from our path to see this great wonder. Brothers, we thank the whites for our good treatment." The emotions of Red Jacket, the celebrated Indian chief, while visiting the Falls some years since, were of a very different character. He admired the grandeur of nature's work, but not with that religious awe and devotional feeling with which those wild untutored sons of the forest mentioned above were inspired. Envy and jealousy rankled in his bosom against the white man, the destroyer of his race. He saw, at a glance, the superiority of the white man over the red man of the woods, and he hated him because he had not the power to become his equal.

Point View

is a few rods to the right of the Ferry-House, on the American side. This was the last residence of Francis Abbot, the Hermit of Niagara. On this spot a pagoda was raised, which placed the spec-

tator at an elevation of more than one hundred feet above the cataract, and two hundred and seventy feet above the river; but it was taken down in 1853.

Oatlin's Cave

is on the American side, about sixty rods below the Ferry, and this is the only way of getting to it. The bank is steep and precipitous, and difficult of access. It is about fifteen feet wide, and ten high. Except as containing a few specimens of petrified moss, it is not an object of interest, and is seldom visited by strangers.

Bender's Cave

is on the Canada side, about half-way between the Clifton House and the Suspension Bridge. It is a cavity in the bank, about six feet high and twenty long, formed by a decomposition of the limestone. It is not a place of resort.

The Whirlpool,

on the American side, is three miles below the Falls, and is visited on account of the wild and magnificent grandeur of its scenery. The river here turns abruptly to the right, forming an elbow, and as the waters rush against the opposite banks a whirlpool is formed, in which logs and other bodies have been

known to float for many days before finding their way out.

If you wish to take the trouble to descend the bank, you can get one of the best views of the Rapids from below that is to be had; and you will wonder how the steamer "*Maid of the Mist*" ever passed down here with its crew and lived; yet such is the fact. For particulars, see page 50.

While standing upon the rocks near the water's edge, cast your eyes up the river towards the Canada shore; you will at once perceive that the river is very considerably higher in the centre than it is on each side. The height in the centre above that on the banks is estimated by the engineers to be eleven and a half feet. If two men were to stand, the one with his feet in the water on the American side, and the other on the Canada shore, and extend their hands as high as they could reach, with a handkerchief or any thing of the kind in it, it could not be seen by either.

The charge for visiting the Whirlpool grounds is twenty-five cents: the proceeds go to the support of the De Veaux Orphans' College, which is located on the grounds near the main road.

Devil's Hole

is three and a half miles below the Falls, on the American side, formed by a chasm in the eastern

bank of the river one hundred and fifty or two hundred feet deep. An angle of this gulf is within a few feet of the road, offering the traveler, without alighting, an opportunity of looking into the yawning abyss beneath. During the French War, a detachment of the British army, while retreating from Fort Schlosser, were decoyed into an ambush of French and Indians. The yell of the savage, as it rung out upon the midnight air, was the first indication of their attack. Baggage-wagons, officers, men, women, and children, were encircled and pushed over the bank, and plunged into the awful chasm below. By the most authentic account, the number of those who perished was two hundred and fifty. Only two persons escaped,—a drummer who was caught in the branch of a tree in his descent, and a man by the name of Stedman (the same who put the goats upon Goat Island): while attempting to flee, the bridle-reins were seized by the savages; he instantly cut them loose and escaped. The Indians afterwards gave him all the land he encircled in his flight, which was the point between the Devil's Hole and Fort Schlosser, including the Falls. The visitor can descend the stairs to the water's edge, if he chooses; but, like the "Indian gun, it costs more than it comes to." Weat has produced this wonderful chasm, is left much to conjecture to determine. Sir Charles Lyell

thinks the small stream that pours over into the gulf, near an old saw-mill, would have been "perfectly competent to have cut the ravine, and we need look for no more powerful cause." The battle above mentioned occurred in 1765. The charge for going on to the rock, and descending the stairs below, is twenty-five cents. Chasm Tower, or Mount Eagle, was a few rods below.

"Maid of the Mist" going through the Whirlpool.

She left her moorings, about a quarter of a mile above the Suspension Bridge, June 15, 1861, and swung boldly out into the river, to try one of the most perilous voyages ever made. She shot forward like an arrow of light, bowed gracefully to the multitude on the bridge, and with the velocity of lightning passed on to meet her doom. Many beheld this hazardous, daring adventure, expecting every instant she would be dashed to pieces and disappear forever. Amazement thrilled every heart, and it appeared as if no power short of *Omnipotence* could save her. "There! there!" was the suppressed exclamation that escaped the lips of all. "She careens over! She is *lost!* She is *lost!*" But, guided by an eye that dimmed not, and a hand that never trembled, she was piloted through those maddened waters by the intrepid Robinson in perfect safety,

and is now performing less hazardous voyages on the St. Lawrence.

She is the only craft, as far as we know, that ever made this fearful trip and lived. Though our intrepid hero had performed many hazardous exploits in saving the lives of persons who had fallen into the river, yet this last act, in taking the *Maid of the Mist* through the Whirlpool, is the climax of all his adventures. The boat lost her smoke-stack, but otherwise received no injury, being very strongly built.

GEOLOGY

AND

RECESSION OF THE FALLS.

Sir Charles Lyell says, "The first feature which strikes you in this region is the escarpment, or line of inland cliffs, one of which runs to a great distance east from Queenston. On the Canada side it has a height of more than three hundred feet. The first question which occurs when we consider the nature of the country, is, how cliffs were produced; why do we so suddenly step from this range to the gypseous marls, and then so suddenly to the subjacent shale and sandstone. We have similar lines of escarpment in all countries, especially where the rock is limestone; and they are considered to be ancient sea-cliffs, which have become more gentle in their slope as the country has emerged from the ocean. You may perhaps ask if the Ontario may not once have stood at a higher level, and the cliffs been produced by its action, instead of that of the ocean. Some of you may have passed along the ridge road, as it is called,—that remarkable bank of sand which exists parallel, or nearly so, to the present borders of Lake

Ontario, at a considerable height above it. I perfectly agree with the general opinion respecting this, that it was the ancient boundary of Lake Ontario. In some parts of it fresh-water shells have been found. You cannot explain the escarpment by the aid of the action of the lake, for it extends farther, and not in the same direction. When the land emerged gradually from the sea, as it is now doing, the sea would naturally create those sea-cliffs, and during the upheaval they would of course become inland. In Europe, proofs that limestone rocks have been washed away are abundant. In Greece, in the Morea, this is especially conspicuous. We have there three limestones one above the other, at various distances from the sea. Along the line you may see littoral caves worn out by the action of the waves. The action of the salt spray, which has effected a sort of chemical decomposition, is easily to be observed. So completely is this the case with each of these lines that you cannot doubt for an instant that here is a series of inland cliffs; and this phenomenon being so certain in the Morea, leads us by analogy to infer that these escarpments of the district were produced by a similar cause.

"It is not disputed that there is some change going on at the Falls, even now. There occurs, as we know, occasionally a falling down of fragments of rock, as may be seen at Goat Island. The shale at the bot-

tom is destroyed in consequence of the action of the spray and frost; the limestone, being thus undermined, falls down; and it has been believed that in this way there has been a recession of about fifty yards in about forty years; but this is now generally admitted to have been overstated. There is at least a probable recession of about one foot every year: though part of the fall may go back faster than this; yet, if you regard the whole river, even this probably will be something of an exaggeration. Our observations upon this point are necessarily imperfect; and when we reflect that fifty years ago the country was perfectly wild, and inhabited by bears, wolves, and here and there a hunter, we shall think it surprising that we have any observations at all, even for such a period back. We have an account of the Falls, given by Father Hennepin, a French missionary, who gives an exaggerated description of them, and yet one which is tolerably correct. He represents a cascade as falling from the Canada side across the other two. He says that between Lake Erie and Lake Ontario there is a vast and wonderful waterfall; after speaking of this, he says there is a third cascade at the left of the other two, falling from west to east, the others falling from south to north. He several times alludes to the third cascade, which he says was smaller than the other two. Now, those who consider that because Father Hennepin

gave the height of the Falls at six hundred feet, small value is to be attached to his testimony respecting any part of the country, do him injustice. I think it perfectly evident that there must have been such a third cascade, falling from west to east, as that to which he alludes.

"A Danish naturalist, who came in the year 1750 to this country and visited the Falls, of which he has also given us a description, which was published in the Gentleman's Magazine in 1751, also gives a view of the Falls. In its general features his description agrees well with that of Father Hennepin. He went seventy-three years after him, and there was then no third cascade. But the point where Father Hennepin had put his cascade he had marked, and says that 'that is the place where the water was forced out of its direct course by a prodigious rock, which turned the water and obliged it to fall across the Falls.' He goes on to say, that only a few years before, there had been a downfall of that rock; which was undoubtedly part of the Table Rock; and after that the cascade ceased to flow. Now, it does not appear whether he had ever seen Hennepin's account or not: he only mentions the fact that there had been a third cascade; and it is a striking confirmation of the accuracy of Father Hennepin's description. We find these two observers, at an interval of seventy years apart, remarking on the very kind of change

which we now remark as having taken place within the last fifty years; an undermining of the rock, and a falling down of the limestone, and a consequent obliteration of the fall. Every one who has visited the Falls, on inquiring of the guides about the changes that have taken place, may have been told that the American Fall has become more crescent-shaped than it was thirty years ago, when it was nearly straight. The centre has given way, and now there is an indentation of nearly thirty feet. The Horse Shoe Fall also has been considerably altered. It is not of so regular a crescent shape as formerly, but has a more jagged outline, especially near Goat Island: it has less of the horse-shoe shape, from which it derives its name, than when it was given. It is quite certain that things there are not stationary; and the great question is whether, by this action, the whole Falls have been reduced in this manner. From representations made by other travelers, I was desirous of ascertaining whether fresh-water remains were found on Goat Island, as had been said; for it would be striking if on this island there should be a stratum of twenty-five feet of sand and loam, pebbles and fresh-water shells. They were found there, and I made a collection of several species of shells found on the island: among them were the *planorbis*, a small *valvata*, and several other kinds. They were of kinds generally

found living in the rapids in the river above, or in the lake.

"In digging a mill-race there, only a few years since, there were found a great number of shells, and also a tooth of a mastodon, some twelve or thirteen feet below the surface. It was the common Ohio mastodon, and must have been buried beneath these twelve or thirteen feet of fresh-water deposits, one layer at a time, each containing different shells. In answer to my question, whether similar shells were ever found lower down, the guide said he would take me to a place, half a mile below, where the strata had been laid open. We found there deposited in the rock a small quantity of fresh-water shells, showing that this old deposition extended down to that distance. Here we have proof that the river once stood at a higher level and in a tranquil state; and there is every appearance of the rock having been like a solid barrier to hold the waters back in a lake-like state, so that they might throw down those fresh-water deposits at that height. You will understand this better if you consider that if the Falls go on receding, no matter at what rate,—an inch, a foot, a yard, a year,—in the course of time the whole must recede considerably from its present condition. What proofs should we have of this afterward? You will easily see that if the river should cut its way back to a certain point, the effect

would be to remove the rocky barrier, the limestone of the rapids, which has been sufficient to pond the river back. But if the river cuts its way back, this barrier could no longer exist; the channel would be deepened, and the deposits existing high and dry upon the land would become proof of the recession. This kind of proof we have, that the Falls have receded three miles from the Whirlpool, the limestone having been higher at the Whirlpool than the river at the Falls. It may be well to say that the beds all dip to the south, at the rate of about twenty-five feet in a mile. In seven miles the dip causes a general rise of the platform to the north, so that when at the top of the cliff you are at a greater height than the level of Lake Erie; and if the Falls were formerly at Queenston, their height was probably near double what they now are.

“Mr. Hall suggested that at that time the whole fall was not at one place, and I think it quite likely that such was the case. There is reason to believe that one fall was upon the quartzose sand below, and the other on the Protean bed. The upper part would of course recede faster than the lower, because it is softer, as is seen to be the case at Rochester; but the limestone, becoming thicker and harder, would recede more slowly. There may have been several falls, as at Rochester, each one of them being

less high than at present, and yet the whole being nearly double its present height.

"I told you that the river fell about one hundred feet between the base of the Falls and Lewiston: so that the bed slopes at that rate. This slope of the river, and then the upward slope of the platform, are the reasons why the Falls are now of less height than formerly: so when we carry ourselves back in imagination to the time when the river had not receded so far, we have a barrier of limestone much higher. The valley in which the river then flowed must have been much narrower than its present ravine. The distance now from the Canada to the American side is about three-quarters of a mile, whereas at half a mile below it is only half that distance.

"Farther investigations, by tracing the fresh-water deposits lower, will give more precise information. You might suppose that if we find the remains of a mastodon in a fresh-water deposit so lately laid dry as that near the village of Niagara, and only twelve feet below the surface, the mastodon has lived in the country at a modern period; you might think that a few centuries would have been sufficient for the accumulation of twelve feet of shelly sandstone and limestone, and that it may have been recently that this mastodon was buried, when the barrier was at the Whirlpool, before this

twelve feet of fluviatile strata were deposited. Yet these strata are older than the Whirlpool.

“Among the objections to the supposition that the ravine was cut out by the Niagara, one is, that at the place called the Devil’s Hole, or the Bloody Run, the ravine must have been cut by some more powerful cause than by a slight stream.

“But this I regard as no objection at all, for on examining the nature of the soil, &c., I am convinced that even the small stream which now flows would have been perfectly competent to cut out the ravine, and that we need look for no more powerful cause.

“Suppose the Falls once to have been near Queens-
ton, they would recede differently at different times,—
faster when the soft shale was at the base, at other
times slowly, when the hard sandstone was to be cut
through. First of all comes the quartzose sand-
stone for a certain distance; then the Falls recede
slowly, but more rapidly when it came to the soft
shales. Then comes the sandstone again at the
base, which now extends to the Whirlpool, and here
the movement was slow. It probably stood for
ages at the Whirlpool. Then for another period it
receded more rapidly; and it is probable that for
the last mile its recession has been comparatively
slow, because the Protean group, and about twenty
feet of sandstone, making about fifty feet of hard
rock at the base, were to be cut through. It is cer-

tain that the movement now is at a faster rate, as the shale is exposed."

The above reasoning perfectly coincides with the opinion of Dr. Dwight, and others who have devoted any time to the subject, and strangers, as far as the author has been enabled to learn, have come to the same conclusion.

The following fragment, written in the Register of the Point View Garden, at Niagara Falls, on Sunday, August 1, 1847, by Dr. BAXLEY, of Baltimore, illustrates the profound impressions produced on the mind and heart by this most wonderful work of nature.

A Sabbath at Niagara.

Here, near the temple of Almighty God,
The soul, wrapp'd in humility, bows down
In awe and reverence. 'Tis meet that man,
The creature, beholding the bold displays
Of power stupendous, wisdom infinite,
Should look, through nature's grandest witness, up
To nature's God. And deeming here all time
A Sabbath, yet on this day appointed
Holy to Him who rear'd these rocky walls,
Buttress'd below by tide-wash'd massive piles,
Entablatured with beetling battlements
And corniced with a waving wilderness
Of verdure,—who outspread yon azure roof,
Now softly mellow'd with ethereal tint,
Or darken'd by the thunder's messenger,
Gilded anon by lightning's gleams, or now

Radiant with starry hosts, whose mirror'd beams
Carpet the billowy floor with silvery light,—
Who raised yon altar, and upon its brow
Of emerald, in characters of light,
Inscribed, e'en with his own right hand, "To God!"
Where ministering birds, with notes attuned
To an eternal anthem, hymn his praise,
And bear on dewy wings a pearly cloud
Of incense up toward the Almighty's throne,
Fit worshippers in nature's holiest fane,—
Who guards the portal of this sacred place
With ever-heaving sea of snowy foam,
Whose tempest voice to man presumptuous calls,
"Thus, and no farther, shalt thou go," and points
To ceaseless whirling tides, the awful
Maelstrom of Niagara, dread emblem of
Th' eternal doom of man, vain man, who seeks
To pass the limit of assign'd command,
And moral law,—

E'en on this Sabbath day,
Here, near God's own great temple, would we bow
● In humble praise and prayer; and, while the lip
Rests silent, would the soul its homage give,
And favor seek; petitioning that in
The devious path of life so may we move,
That when these rocks shall melt with fervid heat,
When the rich garniture of teeming earth
Shall vanish, leaving no trace of brightness
Or of beauty to tell that it once was,
This restless tide no longer flow, and its
Deep cadence cease, when the blue dome that spans
The earth shall pale away, and radiant spheres
No longer shed abroad their hallow'd light,
Then may the hope that rests upon His word
Who ne'er was false to man, who hangs his bow

Upon the cloud, and spreads it night and day
Upon his altar's incense, token to man
Alike of his redeeming power and will,—
Then may the hope that on his word relies,
Nurtured by love and rectitude, grow strong
In trust and prescience of a home "not made
With hands, eternal in the heavens!"

AUGUST 1, 1847.

To Niagara.

WRITTEN AT THE FIRST SIGHT OF ITS FALLS, 1838, BY J. S. BUCKINGHAM.

Hail! Sovereign of the World of Floods! whose majesty and
 might

First dazzles,—then enraptures,—then o'erawes the aching
 sight:

The pomp of kings and emperors, in every clime and zone,
Grows dim beneath the splendor of thy glorious watery
 throne.

No fleets can stop thy progress,—no armies bid thee stay,—
But onward—onward—onward—thy march still holds its
 way;

The rising mist that veils thee as thine herald goes before,
And the music that proclaims thee is the thundering cata-
 ract's roar.

Thy diadem is an emerald green, of the clearest, purest hue,
Set round with waves of snow-white foam and spray of
 feathery dew,

While tresses of the brightest pearls float o'er thy ample
 sheet,

And the rainbow lays its gorgeous gems in tribute at thy
 feet.

Thy reign is of the ancient days,—thy sceptre from on high ;
Thy birth was when the morning stars together sang with
joy ;
The sun, the moon, and all the orbs that shine upon thee
now
Saw the first wreath of glory which twined thine infant
brow.

And from that hour to this, in which I gaze upon thy
stream,
From age to age,—in winter's frost, or summer's sultry
beam,—
By day, by night,—without a pause,—thy waves, with loud
acclaim,
In ceaseless sounds have still proclaimed the Great Eternal
Name.

For whether on thy forest banks the Indian of the wood,
Or, since his days, the red man's foe, on his fatherland has
stood,—
Whoe'er has seen thine incense rise, or heard thy torrent's
roar,
Must have bent before the God of all, to worship and adore.

Accept then, O Supremely Great!—O Infinite!—O God !
From this primeval altar—the green and virgin sod—
The humble homage that my soul in gratitude would pay
To thee! whose shield has guarded me thro' all my wander-
ing way.

For, if the ocean be as naught in the hollow of thy hand,
And the stars of the bright firmament, in thy balance, grains
of sand,
If Niagara's flood seem great, to us who lowly bow,
O Great Creator of the whole! how passing great art thou!

Yet, tho' thy power is greater here than finite mind may scan,
Still greater is thy mercy shown to weak dependent man.
For him thou cloth'st the fertile fields with herbs and fruit
and seed,
For him the woods, the lakes, supply his daily, hourly need.

Around, on high,—or far or near,—the universal whole
Proclaim thy glory, as the orbs in their fix'd courses roll.
And from creation's grateful voice thy hymn ascends above,
While Heaven re-echoes back the chorus, God is love.

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The great stairway is free to visitors, as are all the Ferry grounds, buildings, &c.

Cave of the Winds.

THIS point of interest is unequalled by any locality about the Falls. It is approached from Goat Island on the American side. To those wishing to go behind the sheet of water, a passage through the Cave of the Winds far excels one behind the Fall at Table Rock. This fact is universally confirmed by all who have experienced both. Strangers should visit this cave before hiring a carriage to convey them to the Canada side. By so doing, they will save expense, and be better pleased with their tour than they can be elsewhere.

W. C. WARREN.

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